

CLAIMS

1. A data processing apparatus for processing data for respective pages, comprising:

5 a data reception unit for receiving at least data of a first format for respective pages;

a data conversion unit for converting the data of the first format into data of a second format;

10 a page data management unit for managing the data of the first and second formats in first and second page data in association with each other; and

a control unit for managing whether or not an output processor which executes a predetermined output process with reference to the first or second page data is present.

15 2. The apparatus according to claim 1, wherein said control unit generates said page data management unit in a memory in response to reception of the data of the first format for respective pages.

20 3. The apparatus according to claim 1 or 2, wherein said control unit monitors storage states of the data of the first and second formats in a memory, and releases the first or second page data in accordance with the storage states and a reference state by the output processor.

25 4. The apparatus according to claim 3, wherein when the output processor issues an instruction of the predetermined output process after the first page data

is released, said control unit controls said data conversion unit to convert the data of the second format into data of an output format suited to an output format of the output of the output processor.

5 5. The apparatus according to claim 4, wherein said control unit controls said page data management unit to manage the data of the output format using third page data.

6. The apparatus according to claim 5, wherein
10 upon completion of use of the data of the output format by the output processor, said control unit controls said page data management unit to release the third page data.

7. The apparatus according to claim 3, wherein
15 said control unit releases said page data management unit that manages the first and second page data under a condition that storage of the data of the first and second formats in the memory is complete and reference to page data by the output processor is complete.

20 8. The apparatus according to claim 3, wherein when said control unit determines that storage of the data of the first format in the memory is complete, said control unit permits said data conversion unit to start a data conversion operation from the first format
25 to the second format.

9. The apparatus according to claim 8, wherein said control unit monitors completion of the conversion

operation of said data conversion unit and a storage state of the data of the second format in the memory, and permits a predetermined process for the data of the second format in accordance with the storage state.

5 10. The apparatus according to claim 9, wherein said page data management unit is generated for data of each page received by said data reception unit, and when data including a plurality of pages are received, said page data management unit manages the first and
10 second page data while associating respective pages with each other.

 11. The apparatus according to claim 7, wherein first format is one of a plurality of data formats including raw data, JBIG data, JPEG data, TIFF data,
15 and TEXT data, and data of the second format has a JBIG data format.

 12. A data processing method for processing data for respective pages, comprising:

 a data reception step of receiving at least data
20 of a first format for respective pages;

 a first page data generation step of generating first page data used to manage the data of the first format;

 a data conversion step in a data conversion unit
25 for converting the data of the first format into data of a second format;

a second page data generation step of generating second page data used to manage the data of the second format;

a page data management step of managing the data
5 of the first and second formats in first and second page data in association with each other using a page data management unit; and

a control step of managing whether or not an output processor which executes a predetermined output
10 process with reference to the first or second page data is present.

13. The method according to claim 12, further comprising a page data management unit generation step of generating the page data management unit in a memory
15 in response to reception of the data of the first format for respective pages.

14. The method according to claim 12 or 13, further comprising a first page data release step of monitoring storage states of the data of the first and
20 second formats in a memory, and releasing the first or second page data in accordance with the storage states and a reference state by the output processor.

15. The method according to claim 14, further comprising a data conversion control step of
25 controlling, when the output processor issues an instruction of the predetermined output process after the first page data is released, the data conversion

unit to convert the data of the second format into data of an output format suited to an output format of the output of the output processor.

16. The method according to claim 15, further
5 comprising an output format data management step of controlling the page data management unit to manage the data of the output format using third page data.

17. The method according to claim 16, further
comprising a second page data release step of
10 controlling, when use of the data of the output format by the output processor is complete, the page data management unit to release the third page data.

18. The method according to any one of claims 12
to 17, further comprising a page data management unit
15 release step of releasing the page data management unit that manages the first and second page data under a condition that storage of the data of the first and second formats in the memory is complete and reference to page data by the output processor is complete.

20 19. The method according to claim 18, wherein the page data management unit is generated for data of each page received by said data reception unit, and when data including a plurality of pages are received, the page data management unit manages the first and second
25 page data while associating respective pages with each other.

20. The method according to claim 19, wherein the first format is one of a plurality of data formats including raw data, JBIG data, JPEG data, TIFF data, and TEXT data, and data of the second format has a JBIG
5 data format.

21. A computer program for making a computer execute a data processing method of any one of claims
12 to 20.